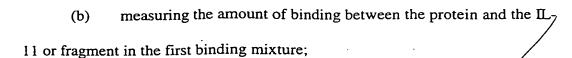
## What is claimed is:

- 1. An isolated polynucleotide comprising a nucleotide sequence selected from the group consisting of:
- (a) the nucleotide sequence of SEQ ID NO:1 from nucleotide 803 to nucleotide 1999;
- (b) a nucleotide sequence varying from the sequence of the nucleotide sequence specified in (a) as a result of degeneracy of the genetic code;
  - (c) an allelic variant of the nucleotide sequence specified in (a); and
- (d) a fragment of (a) or (b) encoding a protein having the ability to bind IL-11.
- 2. The polynucleotide of claim 1 wherein said nucleotide sequence encodes for a protein having a biological activity of the human IL-11 receptor.
- 3. The polynucleotide of claim 1 wherein said nucleotide sequence is operably linked to an expression control sequence.
- 4. The polynucleotide of claim 2 comprising the nucleotide sequence of SEQ ID NO:1 from nucleotide 803 to nucleotide 1999.
- 5. The polynucleotide of claim 2 comprising the nucleotide sequence of SEQ ID NO:1 from nucleotide 803 to nucleotide 1828 or a fragment thereof.
- 6. The polynucleotide of claim 2 comprising the nucleotide sequence of SEQ ID NO:1 from nucleotide 1907 to nucleotide 1999 or a fragment thereof.

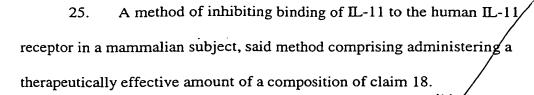
- 7. The polynucleotide of claim 1 comprising the nucleotide sequence of SEQ ID NO:1 from nucleotide 734 to nucleotide 1999.
- The polynucleotide of claim 1 comprising the nucleotide sequence of SEQ ID NO:1 from nucleotide 1067 to nucleotide 1828.
- 9. The polynucleotide of claim 1 comprising the nucleotide sequence of SEQ ID NO:1 from nucleotide 1067 to nucleotide 1999.
  - 10. A host dell transformed with the polynucleotide of claim 3.
  - 11. The host cell of claim 8, wherein said cell is a mammalian cell.
- 12. A process for producing a human IL-11R protein, said process comprising:
- (a) growing a culture of the host cell of claim 10 in a suitable culture medium; and
  - (b) purifying the human IL-11R protein from the culture.
- 13. An isolated human IL-11R protein comprising an amino acid sequence selected from the group consisting of:
  - (a) the amino acid sequence of SEQ ID NO:2;
  - (b) the amino acid sequence of SEQ ID NO:2 from amino acids 24 to 422;
  - (c) the amino acid sequence of SEQ ID NO:2 from amino acids 24 to 365;
  - (d) the amino acid sequence of SEQ ID NO:2 from amino acids 391 to 422;
- (e) the amino acid sequence of SEQ ID NO:2 from amino acids 102 to 422;

- (f) the amino acid sequence of SEQ ID NO:2 from amino acids 102 to 365;
- (g) the amino acid sequence of SEQ ID NO:2 from amino acids 24 to 359;
- (h) the amino acid sequence of SEQ ID NO:2 from amino acids 24 to 345;
- (i) the amino acid sequence of SEQ ID NO:2 from amino acids 24 to 324; and
- (j) fragments of (a)-(i) having a biological activity of the human IL-11 receptor.
- 14. The protein of claim 13 comprising the amino acid sequence of SEQ ID NO:2.
- 15. The protein of claim 13 comprising the sequence from amino acid 24 to 365 of SEQ ID NO:2.
- 16. A pharmaceutical composition comprising a protein of claim 13 and a pharmaceutically acceptable carrier.
  - 17. A protein produced according to the process of claim 12.
- 18. A composition comprising an antibody which specifically reacts with a protein of claim 13.
- 19. A method of identifying an inhibitor of IL-11 binding to the human IL-11 receptor which comprises:
- (a) combining a protein of claim 13 with IL-11 or a fragment thereof, said combination forming a first binding mixture;



- (c) combining a compound with the protein and the IL-11 or fragment to form a second binding mixture;
- (d) measuring the amount of binding in the second binding mixture; and
- (e) comparing the amount of binding in the first binding mixture with the amount of binding in the second binding mixture; wherein the compound is capable of inhibiting/IL-11 binding to the human IL-11 receptor when a decrease in the amount of binding of the second binding mixture occurs.
- 20. The method of claim/19 wherein the first and second binding mixture comprise gp130 or a fragment thereof capable of binding to the protein of claim 13 or the IL-11 or fragment used therein.
  - 21. An inhibitor identified by the method of claim 19.
- 22. A pharmaceutical composition comprising the inhibitor of claim21 and a pharmaceutically acceptable carrier.
- 23. A method of inhibiting binding of IL-11 to the human IL-11 receptor in a mammalian subject, said method comprising administering a therapeutically effective amount of a composition of claim 22.
- 24. A method of inhibiting binding of IL-11 to the human IL-11 receptor in a mammalian subject, said method comprising administering a therapeutically effective amount of a composition of claim 16.

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- 26. A method of treating or preventing loss of bone mass in a mammalian subject, said method comprising administering a therapeutically effective amount of a composition of claim 22.
- 27. A method of treating or preventing loss of bone mass in a mammalian subject, said method comprising administering a therapeutically effective amount of a composition of claim 16.
- 28. A method of treating or preventing loss of bone mass in a mammalian subject, said method comprising administering a therapeutically effective amount of a composition of claim 18.
- 29. An isolated polynycleotide comprising a nucleotide sequence capable of hybridizing under stringent conditions to polynucleotide of claim 4.
- 30. An isolated polynucleotide comprising a nucleotide sequence encoding a peptide or protein comprising an amino acid sequence selected from the group consisting of:
  - (a) the amino acid sequence of SEQ ID NO:2;
  - (b) the amino acid sequence of SEQ ID NO:2 from amino acids 24 to 422;
  - (c) the amino acid sequence of SEQ ID NO:2 from amino acids 24 to 365;
  - (d) / the amino acid sequence of SEQ ID NO:2 from amino acids 391 to 422;

- (e) the amino acid sequence of SEQ ID NO:2 from amino acids 112 to 422;
- (f) the amino acid sequence of SEQ ID NO:2 from amino acids 112 to 365;
- (g) the amino acid sequence of SEQ ID NO:2 from amino acids 24 to 359;
- (h) the amino acid sequence of SEQ ID NO/2 from amino acids 24 to 345;
- (i) the amino acid sequence of SEQ 10 NO:2 from amino acids 24 to 324; and
- (j) fragments of (a)-(i) having a biological activity of the human IL-11 receptor.
- 31. The polynucleotide of claim 2 comprising the nucleotide sequence of SEQ ID NO:1 from pacleotide 734 to nucleotide 1828.
- 32. The polynucleotide of claim 2 comprising the nucleotide sequence of SEQ ID NO:1 from nucleotide 734 to nucleotide 1810.
- 33. The polynucleotide of claim 2 comprising the nucleotide sequence of SEQ ID NO:1 from nucleotide 734 to nucleotide 1768.
- 34. The polynucleotide of claim 2 comprising the nucleotide sequence of SEQ ID NO:1 from nucleotide 734 to nucleotide 1705.
- 35. The protein of claim 13 comprising an amino acid sequence beginning at amino acid 26 of SEQ ID NO:2.
- 36. The protein of claim 13 comprising an amino acid sequence beginning at amino acid 23 of SEQ ID NO:2.

37. The protein of claim 13 comprising an amino acid sequence beginning at amino acid 1 of SEQ ID NO:2.

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